

SECTION 3

Affected Environment

Section 3 describes the existing social, economic, and environmental setting of the study area that may be affected by the reasonable alternatives/recommended alternative described in Section 2. Environmental resources discussed in this section, such as cemeteries, wetlands, and floodplains are shown on the aerial photo at the back of the EIS.

Land Use and Related Characteristics

Geographical Setting

The study area is located in Vernon County in west central Wisconsin (see Location Map inside front cover, and Exhibit 1-1). Municipalities in the study area include the Cities of Viroqua and Westby, Vernon County, and the Towns of Franklin, Jefferson, Viroqua, Christiana, and Coon.

Vernon County lies within Wisconsin's geologic Driftless Area, which was protected from glacial action due to high land to the north, and low land to the east that was more conducive to the advance of glacial lobes. There are distinctive features of the Driftless Area in the study area. As part of the weathering process of residual limestone and sandstone, rock formations remain above the surrounding terrain, like the Three Chimneys formation located north of Viroqua and west of existing USH 14/61 (see Aerial Photo Exhibit).

Another feature is sinkholes and caves caused by the solvent action of the underground water and fissures in overlying rock. There are many sinkholes in the study area. While there are no public records to identify all of the locations, some area residents indicated where sinkholes are located on their properties. The USDA Natural Resource Conservation Service has prepared technical guidance for filling sinkholes to reduce erosion, prevent expansion of the hole, and reduce ground water pollution. The Viroqua City cave, which is 183-meters-long (600 feet), is located in the central part of the city, west of USH 14/61.

Terrain in the study area is gently rolling to rolling. Elevations range from 417 meters (1,368 feet) National Geodetic Vertical Datum (NGVD) east of the WisDOT wayside on USH 14/61 between Viroqua and Westby, to 290 meters (952 feet) NGVD near STH 56/82 east of Viroqua.

The yearly temperature ranges from an average high of -1 degree Celsius (30 degrees Fahrenheit) in January to an average high of 30 degrees Celsius (86 degrees Fahrenheit) in July. The average annual precipitation is 805 millimeters (32 inches), with the heaviest precipitation occurring from May to September.

General Land Use / Zoning

Vernon County does not have a land use plan. County zoning is limited to a shoreland and floodplain zoning ordinance. The shoreland zoning ordinance was established to promote

public health, safety, convenience, and welfare by preventing water pollution; protecting spawning grounds, fish, and aquatic life; controlling building sites and placement of structures; and preserving shore cover and natural beauty. It applies to all unincorporated areas of Vernon County that are within 303 meters (1,000 feet) of the ordinary high-water mark of navigable lakes, ponds, or flowages; and within 100 meters (300 feet) of the ordinary high-water mark of navigable rivers or streams.

The floodplain zoning ordinance regulates development in flood hazard areas to protect life, health, and property. This ordinance applies to all of Vernon County, and divides floodplain areas into three categories: Floodway District, Flood Fringe District, and the General Floodplain District. Permitted uses within each of the districts are enumerated in the ordinance. The Shoreland and Floodplain Zoning Ordinances are administered by the Vernon County Sanitary and Zoning Administrator.

The Cities of Viroqua and Westby have zoning ordinances, but not land use plans. They also have extraterritorial zoning ordinances that extend 2.4 kilometers (1.5 miles) beyond the corporate limits. Extraterritorial zoning allows Westby and Viroqua to review town development plans to ensure compatible land uses.

Land use in Viroqua and Westby is a mix of residential, commercial, industrial, and institutional, as well as parks, open space, and other land uses.

The Towns of Franklin, Jefferson, Viroqua, Christiana, and Coon are predominantly agricultural with scattered rural residential development. There is little comprehensive planning or zoning in the towns. The Town of Coon has a zoning ordinance, and the Town of Christiana is developing a zoning ordinance.

Vernon County farmers participate in the State's Farmland Preservation Program that offers annual income tax credits for operating farms in accordance with a soil and water conservation plan. The agreement between the landowner and the State of Wisconsin requires that the enrolled land remain in exclusive agricultural production. To be eligible for the program, a farm must be at least 14.2 hectares (35 acres) in size, and have gross farm profits of not less than \$6,000 per year.

Farmers can also enroll in the Conservation Reserve Program administered by the USDA Natural Resource Conservation Service. This program offers long-term rental payments and cost-share assistance to farm owners or operators to establish permanent vegetative cover on land that is highly erodible or that may contribute to water quality problems.

Transportation Service

Mass Transit

The Cities of Viroqua and Westby do not have mass transit services. There is no public paratransit service in the study area. Two private companies provide transportation services to individuals on Medicaid or individuals with medical/physical disabilities. Viroqua Cab Company provides services to Viroqua and Westby. Greyhound provides commercial bus service to Viroqua and Westby on a daily basis. There is no other commercial bus service in the study area.

Air / Rail Service

The Viroqua Municipal Airport is located north of Viroqua and west of USH 14/61 between Airport Road and Springville Road (see Aerial Photo Exhibit). The airport is classified as a Basic Utility airport in the *Wisconsin Airport System Plan 2020*. Basic Utility airports serve small non-jet aircraft. The airport has a paved primary runway oriented in a northwest direction, and a turf secondary runway oriented in a northeast direction toward USH 14/61. Long-range plans call for a 152-meter (500-foot) extension at the northwest end of the primary runway. Clear zone and aviation easements have been purchased at the ends of the runways to provide the necessary clearances between airport operational surfaces and adjoining properties. Zoned elevations are in effect on land surrounding the airport.

Although the airport does not have instrument landing capabilities, the WisDOT Bureau of Aeronautics indicates this is a growing airport with a need for expanded hangar facilities and possible instrument landing in the future (see Appendix C, page C-9). Information regarding the potential impacts of Alternatives C-4 and C-5 on the airport is provided in Section 4.

There is no rail service in the study area.

Highways

The USH 14/61 corridor through the study area extends from the STH 27/82 intersection south of Viroqua to CTH GG west of Westby, a distance of 27 kilometers (17 miles). STH 82 is routed concurrent with USH 14/61 to STH 56/82 in downtown Viroqua. STH 27 is routed concurrent with USH 14/61 to a point near Westby's north city limits. From there, STH 27 heads to the northeast and provides a link to IH-90 at Sparta, about 37 kilometers (23 miles) from Westby.

USH 14/61 is included in Wisconsin's portion of the National Highway System (NHS) designated under the 1998 *Transportation Equity Act for the 21st Century* (TEA 21). It is a "Connector" under WisDOT's *Corridors 2020 Plan* which was developed to provide a network of high quality highways to link and serve the state's major economic and tourism centers. USH 14/61 is also a federal/state "long truck route," allowing trucks up to 19.5 meters (65 feet) in length to use the highway.

At the local level, USH 14/61 is Main Street in downtown Viroqua and Westby. It provides access to residential, commercial, and industrial development as well as to community resources and services such as schools, medical facilities, churches, the Vernon County Fairgrounds, federal, state, and local government offices.

Other State and County Trunk highways serving the study area include the following:

- STH 56 (Decker Street) passes through Viroqua in an east-west direction and intersects USH 14/61 (Main Street) in the downtown. STH 56 is a Major Collector highway west of Main Street and a Minor Arterial highway east of Main Street.
- STH 82 runs concurrent with STH 56 from downtown Viroqua to a point about 3 miles east of Viroqua. From there, STH 56 splits to the southeast to Viola, and STH 82 splits to the northeast to La Farge. STH 82 is a Major Collector highway.
- CTH J and CTH T intersect USH 14/61 south of Viroqua. These highways are classified as Major Collectors.

- CTH NN enters Viroqua from the south, and is classified as a Minor Collector highway.
- CTH B, which connects to STH 56 west of Viroqua, is classified as a Major Collector highway.
- CTH Y, which crosses USH 14/61 north of Viroqua, is classified as a Major Collector highway.
- CTH BB, which intersects USH 14/61 north of Viroqua, is classified as a Minor Collector highway.
- STH 27, which runs concurrent with USH 14/61 through Viroqua and departs from USH 14/61 in Westby, is classified as a Principal Arterial highway.

Residential Development

Residential development in the study area is concentrated mainly within the Westby and Viroqua corporate limits. Residential development in the surrounding towns includes farm residences, other rural residences, and several subdivisions.

Residential growth in Viroqua and Westby has been moderate. Between 1996 and August 1999, 36 residential building permits were issued in Viroqua, and 13 in Westby. Planned residential expansion in Viroqua includes a parcel of land adjacent to STH 56 on the city's west side, and the Eagle Ridge subdivision on the city's south side near the golf course. In addition, two property owners in the vicinity of USH 14/61 and CTH T have indicated they intend to subdivide portions of their properties for residential subdivision development. Residential expansion in Westby is possible on the city's southwest side, near Tristate Road.

Residential subdivisions in the surrounding towns include the following:

- The Oak Knoll Subdivision is located on the west side of USH 14/61 near the WisDOT wayside, and has direct access to USH 14/61.
- The Skyline Drive Subdivision is located east of USH 14/61 near the WisDOT wayside. Access is provided from Old Highway 14.
- A subdivision is located on the east side of USH 14/61 at Smith Road, and has direct access to USH 14/61.
- The Woodland Country Retreats subdivision is being developed in the vicinity of Prairie Edge Road and CTH Y, 2.4 kilometers (1.5 miles) east of USH 14/61.

Overall, residential growth in the towns has been moderate. In 1998, the Town of Jefferson reported 13 new homes, the Town of Viroqua 10 new homes, and the Town of Coon 5 new homes.

Commercial and Industrial Development

Commercial and industrial development in the study area largely occurs in the Cities of Westby and Viroqua. In Westby, most commercial development is located along USH 14/61 in the CBD, with a few businesses located near the north and south city limits. Businesses include gas stations, convenience stores, a funeral home, health services, real estate offices, banks,

specialty shops, a bowling alley, a grocery store, restaurants, a creamery, and other commercial activities. In general, business growth in Westby has been moderate. Between 1996 and 1999, Westby issued 10 building permits for commercial development.

Accelerated Genetics, one of the largest artificial insemination companies in the United States, is located on the south side of Westby at Tristate Road and USH 14/61. It provides artificial insemination services for more than 200,000 customers across the nation. Accelerated Genetics also has a production facility at Neprud Road and Unseth Road west of the city.

Westby has a 32-hectare (80-acre) industrial park at the intersection of USH 14/61 and STH 27. About 27 hectares (67 acres) of the park are developed. Businesses include the Westby Credit Union, Hansen's IGA, ORC Industries, Sue's Amazing Sun Dog, Badger Environmental and Earthworks, 5 Star Construction, River City Concrete, Cennex Corn Drying Plant, Mowery's Landscape, and DHIA Milk Testing. These businesses employ about 170 people.

Viroqua has a variety of businesses adjacent to USH 14/61. These include department stores, grocery stores, movie theaters, restaurants, gas stations/convenience stores, banks, a hospital, real estate offices, insurance offices, automobile dealerships, motels, and various specialty shops. The majority of the commercial activity is in the central business district; however, commercial development is also occurring on Viroqua's north side. The intersection of Airport Road/CTH BB and USH 14/61 is a developing commercial area. Businesses at that intersection include Jubilee Foods, Wal-Mart, two auto dealerships, restaurants, and an implement dealer. A credit union is being developed near this intersection. In general, business growth in Viroqua has been moderate. Between 1996 and 1999, Viroqua issued 15 building permits for commercial development.

The City of Viroqua was selected to join the Wisconsin Main Street Program in 1989. The Main Street Program was established in 1987 to encourage and support downtown revitalization. The Wisconsin Department of Commerce, Bureau of Downtown Development, administers the program. Revitalization objectives include business district enhancement, protection and restoration of historic buildings, landscaping and lighting, creation of a pedestrian-friendly setting, retail, and other economic development/promotions to encourage consumer and visitor traffic in the downtown.

The Viroqua Industrial Park is located east of USH 14/61, just north of the Vernon County Fairgrounds. The industrial park has 46.5 hectares (115 acres), of which 26.3 hectares (65 acres) are available for development. Five firms are located in the industrial park employing about 950 people. These include National Cash Register, Nelson Muffler, Vernon Area Rehabilitation Center, Tolman Tool, and Quality Marble. In addition, Northern Wisconsin Cooperative Tobacco Pool maintains storage buildings in the industrial park.

Institutional and Public Services

Fire, Ambulance, Police Protection

The Viroqua Fire Department has about 35 volunteer firefighters who provide service to the City of Viroqua, and Towns of Viroqua, Franklin, and Jefferson. The Westby Fire Department has about 45 volunteer firefighters who provide services to the City of Westby, Town of Christiana, and neighboring communities needing assistance.

Tristate Ambulance serves some sections of Viroqua, and LaFarge Ambulance serves the majority of Vernon County.

The Viroqua Police Department consists of nine full-time and five part-time officers and provides service to surrounding communities with smaller departments, including Westby. The City of Westby has three full-time officers. The Vernon County Sheriff's Department, which has 25 officers, provides support and police protection to the City of Westby and to unincorporated areas in the County.

County Government Office Building

The Erlandson Office Building, located adjacent to the Vernon County Farm, houses the Vernon County Coroner, Unit on Aging, Department of Human Services, Veteran Services, Health Department, Sanitarian and Zoning Administrator, and Office of Emergency Management, as well as the University of Wisconsin's Extension Office.

Schools

There are two public school districts in the study area, Viroqua Area Schools and the Westby Area School District. Both districts have a high school, a middle school, and an elementary school.

- Viroqua Middle School and High School is located on Blackhawk Drive, south of Highway 56 on Viroqua's west side
- Viroqua Elementary School is located on Education Avenue, south of Highway 56 on Viroqua's west side
- Westby Middle School and High School is located on West Avenue South, on Westby's west side
- Westby Elementary School is located on Nelson Street on Westby's west side

Both school districts operate bus routes on USH 14/61 and other study-area roads.

There are two nationally recognized private schools in Viroqua, the Pleasant Ridge Waldorf School and the Youth Initiative High School. The Pleasant Ridge Waldorf School, which was opened in 1980, is for Pre-Kindergarten to 8th grade students. School enrollment is roughly 165, and there is a 20-person faculty. The privately operated Youth Initiative High School was opened in fall 1996 as an extension of the Waldorf education philosophy. The 1998-1999 enrollment was about 23 students.

Utilities

The Viroqua Gas Company serves the City and Town of Viroqua. Midwest Gas Company serves the City of Westby and surrounding area. Northern States Power Company serves the City of Viroqua. The Vernon Electric Cooperative serves the rural areas of Vernon County. The City of Westby provides electricity to its residents.

Telephone services is provided by Frontier Communications and the Vernon Telephone Cooperative, Inc. Triax Cablevision provides cable television service.

Westby and Viroqua provide waste collection and recycling programs for their residents. Waste Management serves the areas outside those communities. Vernon County also conducts recycling programs and operates a landfill east of Viroqua.

Cemeteries

Cemeteries in the study area are shown on the Aerial Photo Exhibit. All are outside the area of potential effect of the Build Alternatives. The study's archaeological investigations did not locate any uncatalogued cemeteries or Native American burial sites.

Aesthetics

The study area is characterized by narrow, steep-sided valleys, and generally rolling ridges. The rural landscape visible from USH 14/61 is rolling agricultural fields with some wooded areas. Traveling along USH 14/61 provides panoramic vistas of the area's agricultural landscape. Westby and Viroqua provide scenes typical of small rural Wisconsin communities. The most notable natural feature in the study area is the Three Chimneys rock formation that consists of three sandstone towers. This formation is located along Three Chimney Road about 5 kilometers (3 miles) north of Viroqua (see Aerial Photo Exhibit).

Socioeconomic Characteristics

Population Levels and Trends

Population levels and trends in the study area are summarized in Table 3-1. In general, population levels have been relatively stable. Increases have occurred in the Cities of Viroqua and Westby, and the Town of Coon. Population in the county and other towns has decreased slightly.

Minority population data for the study area is summarized in Table 3-2. The racial makeup is largely homogenous. Less than 1 percent of the study area population is a racial minority. Hispanics are the largest minority group in the study area, followed by Asians or Pacific Islanders, and African-Americans. The City of Viroqua has the highest minority population in the study area.

Income and Work Force

Table 3-3 summarizes income information for the municipalities in the study area. In 1989, the Town of Viroqua had the highest median household income while the City of Viroqua had the lowest. All the municipalities in the study area have median household and per capita incomes below those for the State as a whole.

The top three industries in Vernon County and the City of Viroqua (in terms of number employed) are services, retail trade, and manufacturing. The top three industries in the City of Westby are services, manufacturing, and retail trade (see Table 3-4).

TABLE 3-1
Study Area Population

Community	1980 Population	1990 Population	1998 Population (Estimated)
Vernon County	25,642	25,617	26,492
City of Viroqua	3,716	3,922	4,091
City of Westby	1,797	1,866	1,945
Town of Christiana	823	851	825
Town of Coon	757	701	723
Town of Franklin	1,047	926	908
Town of Jefferson	919	915	920
Town of Viroqua	1,663	1,499	1,496

Source: Bureau of the Census, Wisconsin Department of Administration.

TABLE 3-2
Minority Population

Community	1990 Minority Population	% of Population	Race	% of Race
Vernon County	188	0.7	Hispanic origin	0.4
			Asian or Pacific Islander	0.2
			American Indian or Eskimo	0.1
			African-American	0.05
City of Viroqua	19	0.5	Hispanic origin	0.2
			Asian or Pacific Islander	0.2
			American Indian	0.1
			African-American	0.03
City of Westby	13	0.7	Hispanic origin	0.3
			Asian or Pacific Islander	0.3
			American Indian	0.1
Town of Christiana	3	0.4	Hispanic origin	0.4
Town of Coon	4	0.6	Asian or Pacific Islander	0.6
Town of Franklin	1	0.1	Hispanic origin	0.1
Town of Jefferson	2	0.2	American Indian	0.2
Town of Viroqua	7	0.5	Asian or Pacific Islander	0.2
			Hispanic origin	0.1
			American Indian	0.2

Source: Bureau of the Census, Wisconsin Department of Administration.

TABLE 3-3
Study Area Income

Area	Median Household Income (1989)	Per Capita Income (1989)
Town of Christiana	\$24,306	\$10,083
Town of Coon	\$24,044	\$11,986
Town of Franklin	\$22,188	\$10,379
Town of Jefferson	\$23,448	\$8,908
Town of Viroqua	\$26,900	\$10,823
City of Viroqua	\$19,199	\$10,415
City of Westby	\$20,425	\$10,163
Vernon County	\$21,548	\$10,132
State of Wisconsin	\$29,442	\$13,276

Source: Bureau of the Census, Wisconsin Department of Administration.

TABLE 3-4
Vernon County Employment by Industry

Industry	City of Viroqua (1990)		City of Westby (1990)		Vernon County (1997)	
	Employees	% of Work Force	Employees	% of Work Force	Employees	% of Work Force
Agriculture	64	3.7	59	7.5	144	2.5
Mining	0	0	0	0	0-19	
Construction	70	4.1	26	3.3	240	4.2
Manufacturing	263	15.3	148	18.8	997	17.2
Transportation and Public Utilities	119	6.9	52	6.6	364	6.3
Wholesale Trade	86	5.0	40	5.1	472	8.2
Retail Trade	333	19.4	112	14.2	1,485	25.7
Finance, Insurance and Real Estate	72	4.2	32	4.1	333	5.8
Services	675	39.4	281	35.7	1,735	30.0
Unclassified/ (Cities-Public Administration)	32	1.9	38	4.8	0-19	
Total	1714	100	788	100	5777	100

County Data Source: U.S. Department of Commerce, Bureau of Census: 1997 County Business Patterns
City Data Source: Mississippi River Regional Planning Commission, 1990

Environmental and Related Resources

Surface Water and Fishery

The streams in the study area are located in the Bad Axe River and Kickapoo River watersheds. Streams in the Bad Axe River watershed crossed by the bypasses include a tributary to the Bad Axe River—South Fork, west of Viroqua, a tributary to the Bad Axe River—Springville Branch, northwest of Viroqua, and a tributary to the Bad Axe River—North Fork, west of Westby. Streams in the Kickapoo River watershed crossed by the bypass alternatives include Cook Creek and a tributary to Cook Creek, east of Viroqua.

All of the streams in the Bad Axe River and Kickapoo River watersheds are classified as trout streams. Water quality is generally good, but is affected by agricultural runoff at some locations. Information on potential impacts is found in Section 4.

Floodplains

Floodplains in the study area include narrow bands along tributaries to the Bad Axe River—North and South Forks and Springville Branch, and along Cook Creek and its tributaries (see Aerial Photo Exhibit).

A flood control structure, known locally as the “Raaum Dam,” is located on Springville Road northwest of the Viroqua Municipal Airport. The dam was constructed in 1963 with funds provided by the USDA and is maintained by Vernon County. It protects crops and infrastructure (including highways), and drains about 823.5 hectares (2,035 acres).

As noted earlier, Vernon County has a floodplain-zoning ordinance to regulate development in flood hazard areas. The floodplains in the county are displayed on flood boundary and floodway maps; Flood Insurance Study maps with corresponding profiles from the Federal Emergency Management Agency (FEMA); and Floodplain zoning maps. These maps constitute the official floodplain zoning regulations as approved by FEMA and the Wisconsin Department of Natural Resources (DNR). The ordinance prescribes the permitted activities within floodplains. All development within the county must be consistent with the floodplain zoning ordinance.

Groundwater and Water Supply

Groundwater in the study area is present in lime rock and hard sandstone aquifers, and varies in depth. Well construction logs obtained from the Wisconsin Geologic and Natural History Survey yielded the following water table information applicable to the study area:

- **East of Viroqua**—The average depth to the water table in the vicinity of Alternatives S-2 and C-4 is 40 meters (130 feet) based on 12 well logs. The depth ranges from 18 meters (60 feet) to 63 meters (207 feet).
- **West of Viroqua**—The average depth to the water table near Alternatives S-1 and C-5 is 55 meters (182 feet) based on five well logs. The depth ranges from 40 to 62 meters (130 to 203 feet).
- **Between Viroqua and Westby**—The representative depth to the water table along USH 14/61 between Viroqua and Westby is 49 meters (162 feet) based on one well log.

- **West of Westby** – The representative depth to the water table in the vicinity of Alternatives N-3, N-4, and N-7 is 47 meters (154 feet) based on one well log.

The City of Viroqua's water supply is obtained from three municipal wells that range in depth from 168 meters (550 feet) to 213 meters (700 feet). Westby's water supply is obtained from two municipal wells that are 335 meters (1,100 feet) in depth. The water supply is plentiful and water quality is generally good. Outside the Cities of Viroqua and Westby, rural residents and farms rely on private wells. There are no sole source aquifers in the study area, as stipulated in Section 1424(e) of the Safe Drinking Water Act.

Westby's wastewater treatment facility on Saugstad Road is an activated sludge system. It provides primary treatment for the village. Viroqua's wastewater treatment plant is located on CTH B. It is an activated sludge plant that provides primary and secondary treatment for Viroqua. Rural residences and businesses outside the municipalities use septic systems.

Wetlands

According to the interagency *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (1989), a wetland is defined as:

Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands perform several important biological functions. These include sediment retention and removal, nutrient trapping, water quality protection, shoreline protection, and flood/stormwater attenuation. The wetlands also provide wildlife habitat, water supply to streams, and serve as linear wildlife movement corridors. A particular wetland may provide one or more of these functions depending on its location and proximity to a stream, plant community composition, and hydrologic regime.

Initial evaluation of information sources on wetlands, including Wisconsin DNR's Wetland Inventory Maps, did not identify any wetlands in the study area. Field reconnaissance identified a few scattered wetlands within the area of potential effect of the Build Alternatives. The locations are shown on the Aerial Photo Exhibit at the back of this document. Wetlands within the study area are primarily wet meadow systems that occur in association with streams, creeks, and drainageways.

Following is a general description of the study area wetlands. The referenced wetland types are based on WisDOT's interagency *Wetland Mitigation Banking Technical Guidelines*. Information on wetland impacts is found in Section 4. Table 3-5 provides a list of dominant species identified in the study area wetlands.

Wet Meadow – These wetlands known as marshes, wet meadows, wet prairies, and sloughs, are dominated by perennial herbaceous vegetation. Within the study area most of the wet meadows consist of narrow, vegetated waterways and stream banks. Extensive marshes with open water and emergent vegetation are not present. Wetland plant species such as reed canary grass (*Phalaris arundinacea*), cattail (*Typha latifolia*), and sedge (*Cyperus spp.*) occur within these communities. The most extensive wet meadow wetland occurs

along the drainageway that parallels Tristate Road, west of USH 14/61. This wetland is in an agricultural area that has been affected by farming or grazing.

Scrub Shrub and Wooded Swamp— A limited number of mixed scrub shrub and wooded swamp wetlands were noted in the study area. These occur as narrow bands along small creeks and drainageways. Species such as silver maple (*Acer saccharinum*), elm (*Ulmus spp.*) and cottonwood (*Populus deltoides*) were noted as well as box elder (*Acer negundo*), willow (*Salix spp.*), and dogwood (*Cornus spp.*). A scrub shrub and wooded swamp wetland is located along USH 14/61 south of CTH T.

TABLE 3-5
Dominant Plant Species in Study Area Wetlands

Common Name	Scientific Name	Regional Wetland Indicator Status
Trees and Shrubs		
Silver maple	<i>Acer saccharinum</i>	FACW
American elm	<i>Ulmus americana</i>	FACW-
Sandbar willow	<i>Salix exigua</i>	OBL
Box elder	<i>Acer negundo</i>	FACW-
Eastern cottonwood	<i>Populus deltoides</i>	FAC+
Reed canary grass	<i>Phalaris arundinacea</i>	FACW+
Cattail	<i>Typha latifolia</i>	OBL
Giant ragweed	<i>Ambrosia trifida</i>	FAC+
Goldenrod	<i>Solidago spp.</i>	NI
Smartweed	<i>Polygonum sp.</i>	NI

FAC—Facultative

FACW—Facultative, wetland

NI—No indicator

OBL—Obligate

Source: Reed, 1988. National list of plant species that occur in wetlands: North Central Region. U.S. Fish and Wildlife Service Biological Report 88.

Upland Habitat/Wildlife

The study area is largely in agricultural production. Upland wildlife habitat is provided by fence rows, wooded ravines, and isolated wood lots.

Dominant upland cover types in the study area include agricultural lands with row crops and pasture, as well as scattered woodlots and tree rows bordering agricultural fields. Forested woodlots typically consist of dry-mesic or mesic forest type. These communities are dominated by mixed species such as white oak (*Quercus alba*), sugar maple (*Acer saccharinu*), hickory (*Carya spp.*), basswood (*Tilia americana*), ash (*Fraxinus spp.*), black cherry (*Prunus serotina*), and American elm (*Ulmus americana*). Understory species vary from shrub and saplings to more open areas of herbaceous ground cover. Typical understory shrub species include hornbeam (*Carpinus caroliniana*), and black cherry. Tree and shrub species

also occur throughout the area as tree rows and wind breaks. Species such as box elder (*Acer negundo*) and cottonwoods (*Populus spp.*) are present.

Pasture lands make up most of the nonforested cover types. These areas consist of a mixture of native and non-native grasses as well as other common herbaceous species. Grassed drainages and waterways, some of which may support wetland plants, are also present.

Characteristic species include goldenrod, aster, and common grasses. In a few locations, native grasslands remain.

Goat Prairie Communities also occur in the study area. These bluff prairie communities occur primarily on very thin soils of limestone ridges and steep hillsides, usually with a southwest aspect. Vegetation is dominated mostly by short grasses or low shrubs, and often has a unique assemblage of plants and animals.

A wide variety of wildlife is found in Vernon County. The major upland species include white-tailed deer, wild turkey, squirrel, ruffed grouse, cottontail rabbit, and a variety of small mammals and songbirds.

Threatened and Endangered Species

State-Listed Species

The DNR Bureau of Endangered Resources indicated that there are no state threatened or endangered species in the study area (see Appendix C, page C-1). Several Special Concern species may be present within or near the study area. These include the following:

- The black rat snake (*Elaphe obsoleta*), which prefers moist, wooded east and north slopes of bluffs along rivers
- The timber rattlesnake (*Crotalus horridus*), which prefers deciduous forests and croplands during the summer and steep, rugged bluffs and rocky outcrops during the spring and fall
- The broad beech fern (*Thelypteris hexagonoptera*) found in rich deciduous woods
- The one-flowered broomrape (*Orobanche uniflora*) found in mesic woods
- The rock stitchwort (*Minuartia dawsonensis*) associated with dolomite and sandstone ledges on dry and moist cliffs and in dry prairies
- The cliff goldenrod (*Solidago sciaphila*), which is endemic to the Driftless Area and found on exposed sandstone cliffs

The Special Concern category is used by the DNR to identify species about which some problem in abundance or distribution is suspected but not yet proven.

Federally Listed Species

The U.S. Fish and Wildlife Service indicates that the bald eagle (threatened), the northern monkshood (threatened plant), and the Higgins' eye pearly mussel (endangered) occur in Vernon County. However, the Fish and Wildlife Service indicates these species will not be affected by the alternatives being considered for the Westby-Viroqua bypass corridors (see Appendix C, page C-14).

Agricultural Resources

Agriculture is the predominant land use in the study area and a major economic activity. Vernon County had 153,376.4 hectares (379,000 acres) of farmland in 1998, the ninth highest acreage in the State. There are roughly 2,240 farms in Vernon County, with an average farm size of 68 hectares (169 acres). Approximately 25,486 hectares (62,976 acres) of the County's farmland is enrolled in the Farmland Preservation Program. Vernon County ranks fourth in the State in all alfalfa hay, third in alfalfa hay harvested as dry hay, and fourth in corn for silage production.

Contour stripcropping is a common practice in the study area due to the rolling topography. The goal of contour stripcropping is to reduce soil erosion and protect water quality. In order to control erosion on slopes, farmers arrange their crops in strips alternating between row crops (e.g., corn and soybean) and meadow or small grain (e.g., oats, grass, legumes). A considerable amount of planning is involved in determining the number of row crops needed, laying out the contour strips, the width of the alternating strips and a crop rotation schedule. The NRCS provides technical assistance to farmers involved in contour stripcropping.

Agri-businesses in the project area include dairy products businesses in Westby (e.g., Westby Cooperative Creamery); dairy equipment and supplies in Viroqua (e.g., Walker Bou-Matic, Inc., and West-Central Dairy Systems); feed companies in Viroqua and Westby (e.g., Ag-Consulting & Products, Nelson Agri-Center, Heartland Country Co-op, and Mike's Feed Supply); and fertilizer companies in Viroqua and Westby (e.g., Cenex-Land O'Lakes Co-op, Johnson Howard Enterprises, Inc., and Nelson Agri-Center). Implement dealers are located in Viroqua and Westby (e.g., Clary Equipment, Haakenson Agri-Business, LLC, Stefferud Equipment, Inc., and Strangstalien Sales and Service, Inc.).

Roughly 40 percent of the agricultural land in the area of effect of the reasonable Build Alternatives is classified by the Natural Resources Conservation Service (NRCS) as prime farmland. Prime farmland, as defined by the U.S. Department of Agriculture (USDA), is land that is best suited to food, feed, forage, fiber, and oilseed crops. Prime farmland produces the highest yields with minimal expenditure of energy or economic resources, and farming it results in the least damage to the environment (NRCS 1995).

The 154-hectare (380-acre) Vernon County farm is located just north of Viroqua, adjacent to the east side of USH 14/61 and north side of CTH BB. The farm is divided into "east farm" and "west farm" portions, each of which is leased out by the County. The east farm is leased on an annual basis. The west farm is being leased by Accelerated Genetics on a 5-year lease/renewable lease basis. Vernon County does not have any long-term development plans for the farm. Parcels have recently been sold to an automobile dealer near the USH 14/61 and CTH BB intersection.

Hazardous Materials

A Phase 1 hazardous materials screening was done within the area of potential effect of the Build Alternatives. The purpose was to review past land usage along the proposed alternatives, to identify apparent sources of hazardous materials, and to assess the potential

for affecting sites that may contain environmental contaminants. The scope of the screening included the following:

- A field reconnaissance to identify areas or indicators of hazardous materials along the proposed alternative alignments and areas adjacent to the proposed alternatives.
- Review of DNR Hazardous Waste Program records, EPA databases, and commercial data bases for possible use, storage, treatment, and disposal of hazardous materials, and possible violations.
- Review of publicly available documentation in agency files regarding past violations indicated in the commercial database and possible follow-up remedial actions.

The results of the hazardous materials screening are discussed in Section 4.

Soil and Mineral Resources

Soils in the Vernon County Driftless Area were mostly formed from the deposition of loess (silt) by wind. Loess is at least part of the parent material for many soils in the County. The upland soils are generally sandy and silt loams and the valleys are mostly sands and sandy loams, with some silt loams. The majority of the soils in the County are of mineral origin.

The study area is located mostly within the Downs-Tama-Fayette association with a small portion lying within the Fayette-Stony rock land-Dubuque association. The characteristics of the Downs-Tama-Fayette association include silty, gently sloping to moderately steep, deep, well-drained soils on uplands.

The Fayette-Stony rock land-Dubuque association is present west of Westby in a small portion of the study area. Characteristics include steep, stony rock land, and nearly level to moderately steep, silty, deep to shallow, well-drained soils on upland ridges.

Mineral resources in the study area include sand and gravel pits and quarries. Two sandpits are located north of CTH SS in the Town of Viroqua. Quarries are located north of STH 56/82 and north of CTH SS in the Town of Viroqua. A gravel pit is located in the vicinity of Cut-A-Cross Road in the Town of Coon.

Cultural Resources

Archaeological

A Phase 1 archaeological investigation was conducted by Midwest Archaeological Consulting along the reasonable range of Build Alternatives. The investigation included a thorough literature review to identify all previously reported archaeological sites in the study area and a screening level field survey. Because of the length of the reasonable Build Alternatives and the need to complete the field survey during summer and fall 1999, WisDOT and the State Historical Society agreed that a less intensive survey methodology would be appropriate for this study.

The survey methodology established three levels of archaeological site potential within the study area: high, moderate and low potential. Areas considered to have a high potential

include areas that are proximate to existing or relic water sources, rock outcrops and rockshelters, previously recorded archaeological sites, or potential sites depicted on historic plat maps and other documents. High potential areas with less than 10 percent bare ground surface visibility were subjected to shovel testing (intervals of 15 meters or less). Areas with surface visibility greater than 10 percent will undergo pedestrian surface reconnaissance at 5-meter intervals. Moderate potential areas have excessively to poorly drained upland soils and/or topographic rises not associated with the high potential areas. Moderate potential areas with less than 10 percent bare ground visibility were subjected to shovel testing at 45-meter intervals. Areas with surface visibility greater than 10 percent would undergo pedestrian surface reconnaissance at 10-meter intervals. Low potential areas included areas of poorly drained histolic soils such as peat, slopes steeper than 6 percent and severely disturbed areas. Low potential areas were subject to visual reconnaissance only, unless archaeological deposits were found.

The results of the screening level investigation and additional survey along the recommended alternative since the Draft EIS are discussed in Section 4.

Historic Properties

Consultant Historian Timothy Heggland of Madison conducted historic property investigations and also the initial investigations for the *1996 Study*. Updated investigations for this study were done based on the reasonable Build Alternatives shown on Exhibit 2-D and on the Aerial Photo Exhibit. Structures are defined as historically significant if they meet criteria for eligibility to the National Register of Historic Places, maintained by the U.S. Department of the Interior. Eligibility criteria are summarized as follows:

- **Criterion A**—Structures associated with events that have made a significant contribution to broad patterns of our history
- **Criterion B**—Structures associated with the lives of persons significant in our past
- **Criterion C**—Structures that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction
- **Criterion D**—Structures that have yielded, or may be likely to yield, information important in prehistory or history.

The following properties were identified as potentially eligible to the National Register as a result of the initial investigations for the *1996 Study*:

- **Cina (Cunningham) farmstead on Maple Dale Road east of Viroqua** (see Aerial Photo Exhibit). This property is within the area of potential effect of Alternative C-4. Therefore, additional evaluation was done for purposes of the present study to determine whether the property is eligible to the National Register. Based on the Determination of Eligibility, the portion of the farmstead containing the round barn and other structures has been recommended eligible to the National Register under Criterion C. The key feature on the farmstead is a round barn that was constructed with hollow building tiles (the only

example of such round barn construction in the state). The farmhouse, tobacco barn, and garage are contributing elements to farmstead's historical significance.

- **Vernon County Fairgrounds located on the east side of USH 14/61 at the Viroqua north corporate limits** (see Aerial Photo Exhibit). No additional evaluation was done for this property because it is outside the area of potential effect for the reasonable Build Alternatives being considered in the present study.
- **Stephen Stephenson (Gros) farmstead located on old Highway 14, north of CTH Y.** No additional evaluation was done for this property because it is outside the area of potential effect for the reasonable Build Alternatives being considered in the present study. The farmstead is located 0.5 kilometer (0.3 mile) east of existing USH 14/61 which will be reconstructed to a 4-lane divided roadway under Alternatives C-4 and C-5.
- Historic resources on Main Street in the City of Viroqua include the Good Shepherd Lutheran Church and School complex, the Colonel Cyrus Butt house, and a commercial historic district covering several blocks along the east and west sides of Main Street. No additional evaluation was done for resources along Main Street because it is outside the area of potential effect for this study's reasonable Build Alternatives.
- Historic resources on Main Street in the City of Westby include Our Savior's Lutheran Church, the old Hotel Evans, the bank, and the Bekkedal commercial building. No additional evaluation was done for resources along Main Street in Westby because it is outside the area of potential effect for this study's reasonable Build Alternatives.

The only historic resource in the area of potential effect for the reasonable Build Alternatives is the Cina (Cunningham) farmstead. Information on potential impacts to this resource is found in Section 4.

Recreational Resources / Public Use Lands

Parks / Fairgrounds

Westby has two parks located on the west side of the city. Davidson Park is roughly 0.8 hectare (2 acres) and includes walking trails, shelter houses, and playground equipment. Severson Park is also 0.8 hectare (2 acres) and includes picnic tables, basketball courts, and playground equipment.

Viroqua has two main parks in the downtown. Viroqua Park Bowl, is a 3.6-hectare (9-acre) facility that includes a baseball diamond, softball diamond, basketball court, playground equipment, and walking trails. Eckhardt Park is a 2.4-hectare (6-acre) park that includes picnic tables, playground equipment, horseshoe pits, walking trail, and a volleyball court. There are also eight smaller neighborhood parks in Viroqua with a variety of features including picnic facilities, flower gardens, playground equipment, walking trails, and baseball diamonds.

The Vernon County Fairgrounds is a 12-hectare (30-acre) facility, located on the east side of USH 14/61 near the Viroqua north city limit. The Fairgrounds include exhibition buildings, animal barns, grandstands, and a service area. The annual Vernon County fair is held at the fairgrounds.

There are no parks or other public use lands in the study area.

Bicycle Facilities

There are no designated bicycle facilities in the study area. Vernon County has indicated there are long-range plans for a bicycle/hiking trail that would follow along Sidie Hollow Road between Viroqua and Sidie Hollow County Park located approximately 4 kilometers (2.5 miles) southwest of Viroqua. The County has contacted some landowners for permission to allow such a trail across private property. At this time, the trail has not been officially designated. The Bicycle Federation of Wisconsin and WisDOT produce a State Bike Map that indicates whether roadways are suitable for bicycles. The map indicates that CTH Y, CTH B, and CTH J all have “Best Conditions for Bicycling,” and STH 56, CTH SS, and CTH NN have “Moderate Conditions.” Best Conditions indicates that the roadways have light traffic volumes and may have other favorable factors such as good sight distance and minimal truck traffic. Moderate Conditions indicates the roadways that have moderate traffic volumes relative to pavement.

Snowmobile Trails

There are three snowmobile trails in the study area that are privately funded and maintained by an alliance of local snowmobile groups, known as the Vernon County Alliance. These trails have been established on privately owned land through cooperation with landowners.

A north-south trail identified as Trail 27 and 29 on the *Vernon County Alliance Snowmobile Map* is located just west of Viroqua where it crosses STH 56 near the CTH B intersection. The trail continues north and merges with an unnumbered east-west trail near Hegge Road and Unseth Road, west of Westby. The unnumbered trail continues north along Hegge Road, then runs along the south side of USH 14/61 to a point near Cut-A-Cross Road.

Trail 32 parallels the north side of STH 56 and enters the study area from the west. It intersects Trail 27 and 29 near the CTH B/STH 56 intersection.

Snowmobile trail crossing locations relative to the Build Alternatives, are shown on the Aerial Photo Exhibit.

Highway Wayside

A seasonal highway wayside owned and administered by WisDOT is located on the west side of USH 14/61 about 4.8 kilometers (3 miles) north of Viroqua. The triangular parcel covers 3.6 hectares (9 acres), with 396 meters (1,300 feet) fronting on USH 14/61. It contains a well, a pit toilet, and picnic facilities. There were no Land and Water Conservation Fund (LAWCON) or other special funds used in purchase or development of the wayside. Impacts to the wayside are discussed in Section 4.

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